



ISSN Print: 0972-060X
ISSN Online: 0976-5026

***Verbascum speciosum* Methanolic Extract: Phytochemical Components and Antibacterial Properties**

**Katayoon Nofouzi ^{1*}, Razzagh Mahmudi ²,
Keyvan Tahapour ¹, Ebrahim Amini ¹, Kamyar Yousefi ³**

¹ Department of Pathobiology, Faculty of Veterinary Medicine,
University of Tabriz, Tabriz, Iran

² Department of Food Hygiene and Safety, School of Health,
Qazvin University of Medical Sciences, Qazvin, Iran

³ Department of Clinical Sciences, Faculty of Veterinary Medicine,
Urmia University, Urmia, Iran

Received 04 March 2014; accepted in revised form 15 November 2014

Abstract: The methanolic extract obtained from the leaves of *Verbascum speciosum* L. was investigated for their antimicrobial activities against some pathogenic bacteria (*Staphylococcus aureus*, *Listeria monocytogenes*, *Bacillus anthracis*, *Bacillus cereus*, *Salmonella typhimurium* and *Escherichia coli*) by disc diffusion method. For preparation of the extract dried and powdered plant materials were extracted with methanol by Soxhlet extractor for 72 h at a temperature not exceeding the boiling point of the solvent. Gentamicin, tetracycline and penicillin were used as a positive reference standard to determine the sensitivity of the strains. The extract inhibited the growth of *S. aureus*, *L. monocytogenes*, *B. anthracis*, *B. cereus* and *S. typhimurium*. To determine the cause of antibacterial effects of the extract, it was analyzed by gas chromatography-mass spectrometry (GC-MS). The extract was found to contain boric acid and phenol as the major compounds. Both of these compounds have antibacterial activity. When the antimicrobial activities of standard antibiotics and plant extracts were compared, it was shown that plant extract have effects that were similar to those of antibiotics and moreover, *V. speciosum* extract had an inhibitory effect against *L. monocytogenes*, *B. cereus*, *S. aureus* and *S. typhimurium* more than the penicillin. The results demonstrate that the methanolic extract of the aerial parts of *V. speciosum* L. has significant antibacterial activity.

Key words: *Verbascum speciosum*, Methanolic extracts, Phytochemicals, Antimicrobial.

Introduction

Materials and Methods